Figure 1. Synthesis of MDMA-KLH Immunogen (10)

MDMA-KLH Immunogen

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Figure 2. Synthesis of MDA-KLH Immunogen (14)

MDA-KLH Immunogen

Figure 3. Synthesis of MDMA Haptens (15)-(17)

Figure 4A. Synthesis of MDA Haptens (18)-(19)

Figure 4B. Synthesis of MDA Hapten (20)

Figure 5. Synthesis of HMMA Intermediate (29) for Immunogen (30)

Figure 6. Synthesis of HMMA-KLH Immunogen (30)

Figure 7. Synthesis of HMMA-KLH Immunogen (36)

Figure 8A. Synthesis of MDMA Hapten (38)

Figure 8B. Synthesis of MDMA Hapten Intermediate (40)

MeO N^tBOC
$$K_2CO_3$$
, DMF NC (39) $NaBH_4$, $CoCl_2$ $MeOH$ MeO MeO N^tBOC $MeOH$ MeO M

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FIG. 9

KLH = 52 BSA = 53

FIG. 10

FIG. 11